



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/082,077

02/26/2002

Shih-Hsiung Ni

108339-00054

2659

32294

7590

10/06/2006

SQUIRE, SANDERS & DEMPSEY L.L.P.

14TH FLOOR

8000 TOWERS CRESCENT

TYSONS CORNER, VA 22182

EXAMINER

BLOUNT, STEVEN

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,077

Applicant(s)

NI, SHIH-HSIUNG

Examiner

Steven Blount

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s).

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

A. Claim 31 is objected to as there is a period in line 5.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 4, 15 - 19, 23 – 26, 31 – 35, 37 – 40, and 45 – 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,745,277 to Lee et al

With regard to claim 1, note that Lee et al teaches 1) input ports opposite 80 in figure 1, 2) look ahead logic module 116 for selecting a first memory bank as described in col 3 lines 8+, 3) a pointer assignment module 108, 4) a control device 100 (figure 1), wherein the pointer assignment module acts as described in col 3 lines 40 – 50.

Lee et al does not, however, explicitly teach that the logic module is “contained within an internal memory control device” as set forth in line 5 of claim 1.

The examiner notes that the teachings of Lee et al in col 3 lines 40 to 50 would have made it *obvious* to one of ordinary skill in the art at the time of the invention to have provided the look ahead logic module *in an internal memory control device* in order that it may perform the steps of “write(ing) the receive packets in FIFO 118 into the memory locations identified by the pointers P1 – P4” in view of the fact that the packets must be both held in a memory and transferred under a controlled process in order to perform this operation.

Art Unit: 2616

With regard to claim 2, see member 102. With regard to claim 3, see col 2 lines 50+. With regard to claim 4, see the above. With regard to claims 15 – 19, see the above (especially col 3 lines 43+ with respect to claim 9). With regard to claims 23 – 26 and 31 - 35, note the rejections above wherein the method steps are all inherent in the description of the apparatus. With regard to claims 37 – 40 and 45 – 50, see the above wherein the means in applicants specification are all described in Lee et al as described above.

3. Claims 8 – 11, 30, 44, and 52 – 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of U.S. patent 6,745,277 to Lee et al.

With regard to claim 8, AAPA states in paragraph 7 that:

“In sum, the RDRAM address swapping scheme may be helpful for adjacent addresses that are stored and received according to a FIFO scheme. However, the RDRAM re-mapping scheme suffers considerable drawbacks when non-FIFO reading schemes are used so that the address values are not successive, but random, and the pointers are no longer arranged successively.” See also paragraph 6.

AAPA does not however teach an address swapping system which would avoid stall cycles by having the information written to alternate memory banks. This is taught in Lee et al as described above. See also, in particular, column 3 lines 40+.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have solved the problem presented in AAPA by using an alternating

memory bank assignment scheme, in light of the teachings of Lee et al in order to avoid contention and stall cycles.

With regard to claims 9 – 11, see the rejection of claims 2 – 4 above.

With regard to claim 30, see AAPA at par 7 and col 3 lines 5 – 20 of Lee et al and note the rejection of claim 8 above.

With regard to claim 44, see the rejection of claim 8 above and note that the means taught in the specification correspond to those taught in Lee et al.

With regard to claim 52, see the rejection of claim 51 and further note that the address swapping scheme is discussed above.

5. Claims 12 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of U.S. patent 6,745,277 to Lee et al as applied above, and further in view of U.S. patent 6,970,478 to Nishihara.

With regard to claim 12, AAPA/Lee et al teach the invention as described above, but do not teach storing a packet if it is less than a certain size, or the use of a forwarding table.

Nishihara teaches the use of a router in figure 15, wherein a packet is stored if it is smaller than a certain (aggregated) packet size. See col 13 lines 37+, where it is described that packets less than a superpacket in size are stored and used to ultimately build up the said superpacket.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided AAPA/Lee et al with a means for storing packets of a certain

Art Unit: 2616

(small) size, in light of the teachings of Nishihara, in order that the packets may subsequently be used to create larger packets.

With regard to claim 13, the packets are aggregated as noted above.

With regard to claim 14, note the discussion of a control device with respect to claim 1 and the look ahead module as well.

6. Claims 5 – 7, 20 – 22, 27 – 29, 36, 41 – 43, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,745,277 to Lee et al as applied above, and further in view of U.S. patent 6,970,478 to Nishihara.

With regard to claim 5, Lee et al teach the invention as described above, but do not teach storing a packet if it is less than a certain size, or the use of a forwarding table.

Nishihara teaches the use of a router in figure 15, wherein a packet is stored if it is smaller than a certain (aggregated) packet size. See col 13 lines 37+, where it is described that packets less than a superpacket in size are stored and used to ultimately build up the said superpacket.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Lee et al with a means for storing packets of a certain (small) size in light of the teachings of Nishihara in order that the packets may subsequently be used to create larger packets.

With regard to claims 6 – 7, note the packet aggregation process discussed above in Nishihara.

Art Unit: 2616

With regard to claims 20 – 22, see the rejections above, and note col 3 lines 63+ of Lee.

With regard to claims 27 – 29, see the packet aggregation process in Nishihara discussed above.

With regard to claim 36, the process taught in Nishihara would make obvious the use of a “cycle burst module” in view of the fact that the packets in Nishihara are stored in memory until aggregation in order to provide a large packet and effectively avoid a “small size” penalty.

With regard to claims 41 – 43, note the aggregation process discussed above.

With regard to claim 50, see discussion of “cycle burst module” discussed above.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Blount whose telephone number is 571 - 272 - 3071. The examiner can normally be reached on M-F 9:00 - 5:30.

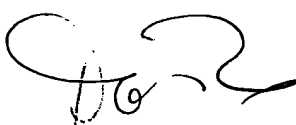
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached on 571 – 272 – 7269 . The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB


9/10/06


DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600